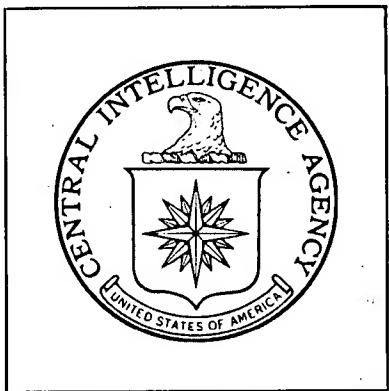


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**Industrial Facilities
(Non-Military)**

**DIRECTORATE OF
INTELLIGENCE**

Basic Imagery Interpretation Report

Tu-shan-tzu Petroleum Refinery and Storage

Tu-shan-tzu, China



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CENTRAL INTELLIGENCE AGENCY
 Directorate of Intelligence
 Imagery Analysis Service

RCS - 13/0187/60

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INSTALLATION OR ACTIVITY NAME		COUNTRY
Tu-shan-tzu Petroleum Refinery and Storage		CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	WAC-PIC NO. 0243-38A
45TUK289080	44-19-50N 084-50-58E	
MAP REFERENCE		
ACIC. USATC Series 200, Sheet 0243-22AL, 1st ed., Apr 60, Scale 1:200,000 (SECRET)		
LATEST IMAGERY USED	NEGATION DATE (If required)	25X1
	Not Required	

ABSTRACT

The Tu-shan-tzu Petroleum Refinery and Storage is a medium size Chinese refinery with crude distillation and thermal cracking units. Because of poor-quality photography, detailed analysis of the refinery was not possible on coverage from September 1961 through October 1964. Good-quality coverage in October 1965, however, showed that all facilities were complete and probably in full operation. Production since then appears to have been continuous. The products of this refinery include straight-run and cracked gasolines, kerosene, diesel and fuel oil, asphalt, and possibly some coke.

This report includes a detailed line drawing, a photograph of the area, mensuration of storage tanks, and a discussion of the status of facilities.

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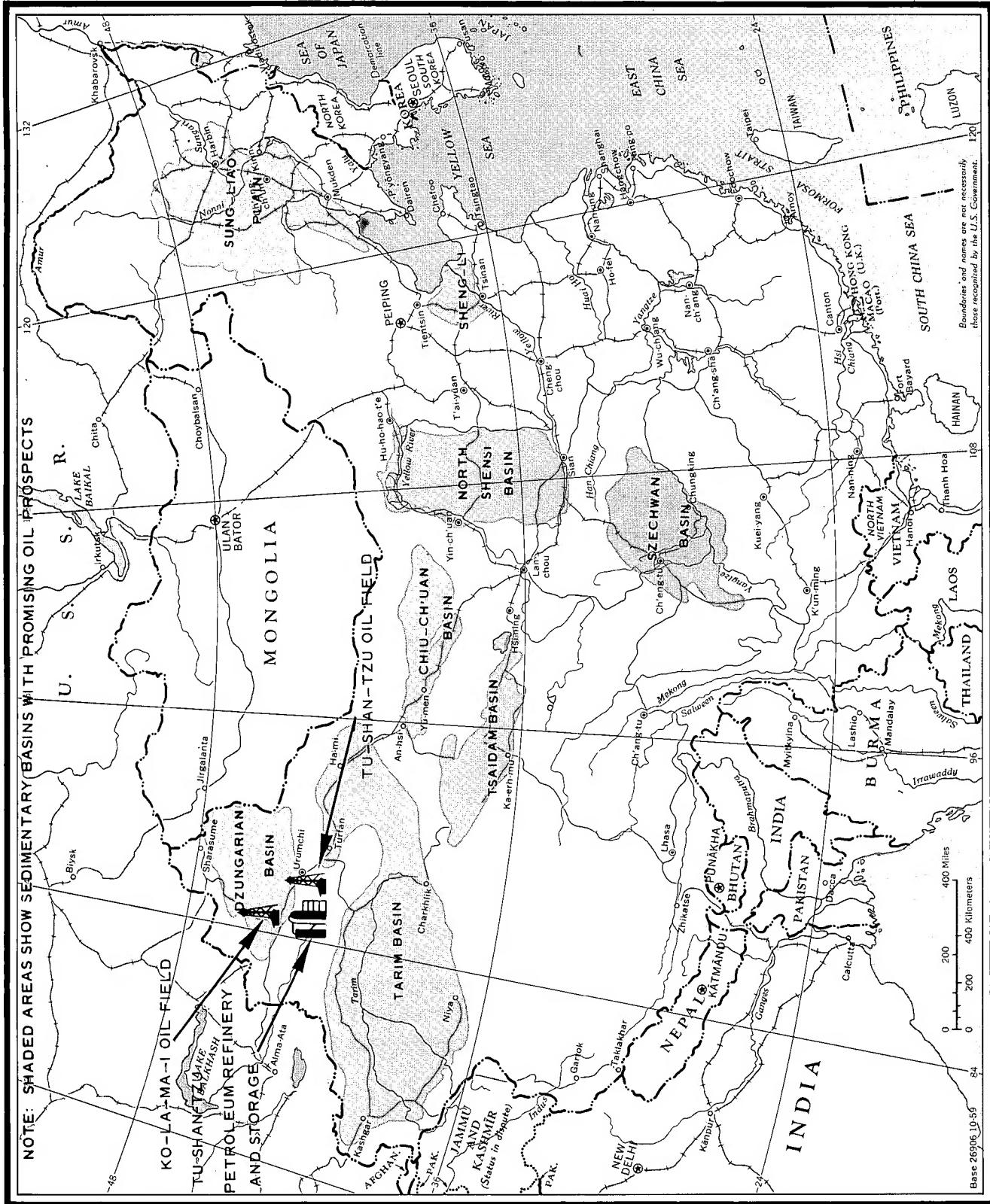


FIGURE 1. LOCATION MAP.

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INTRODUCTION

Tu-shan-tzu Petroleum Refinery and Storage is located on the western edge of Tu-shan-tzu in the desert area of the Dzungarian Basin, Sinkiang Uighur Autonomous Region. Reportedly, construction of this refinery was a joint Sino-Soviet project begun in 1950 at the site of an earlier refinery which had been abandoned.^{1/}

Crude oil for charging the refinery is brought in by pipeline from the Ko-la-ma-i Oil Field approximately 100 nautical miles (nm) to the north and from other Dzungarian Basin fields. Products and crude oil in excess of that used locally are transported by truck to the nearest rail facilities at Wu-lu-mu-chi (Urumchi) about 150 nm to the southeast. The roads connecting Tu-shan-tzu with the rail facilities appear to be hard-surfaced all-weather roads.

BASIC DESCRIPTION

Physical Features

This is one of China's medium size refineries. It occupies a rectangular-shaped area which measures approximately 4,500 by 2,000 feet and covers about 200 acres. Security consists of a wall around the refinery and a control point at its entrance.

Operational Functions

This refinery is capable of performing both primary and secondary processing. The major refining equipment consists of two crude oil distillation units and one probable and three possible thermal crackers. The products include straight-run and cracked gasolines, kerosene, diesel and fuel oil, asphalt, and possibly some coke.

The refinery appeared to be in operation on October 1965 photography and on all subsequent coverage through February 1969.

Construction Status and Activity

Due to the poor resolution and small scale of the photography of this refinery from September 1961 through October 1964, detailed analysis of its early development is not possible. During this period, only part of the processing equipment and some of the storage tanks were distinguishable.

Good-quality small-scale coverage in October 1965 showed that most of the refinery's present processing facilities and storage tanks were complete. Since that time, no significant changes have been noted in the refining facilities and only minor changes in the support and storage areas.

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TOP SECRET RUFFFacilities and Equipment

The following table lists the functional areas and facilities within the refinery. Precise identification of the specialized refinery equipment was not possible because of the small scale and poor quality of much of the imagery covering the complex. The tentative identifications of equipment are based on the overall aspects of the refinery and the relative positions of the units. All items are keyed to Figure 3.

EQUIPMENT AND FACILITIES AT THE TU-SHAN-TZU PETROLEUM REFINERY

<u>Area</u>	<u>Functional Description</u>	<u>Equipment*</u>
A	Storage	4 Storage buildings 9 Horizontal tanks
B	Crude Oil Storage	5 Support buildings (3 partially dismantled) 8 Cylindrical tanks, 3 diam. 130 ft. 4 diam. 80 ft. 1 diam. 15 ft. 4 Semiburied reservoirs (1 under construction)
C	Product and Intermediate Handling and Storage	16 Support buildings 57 Cylindrical tanks, 2 diam. 80 ft. 5 diam. 50 ft. 3 diam. 45 ft. 12 diam. 40 ft. 1 diam. 35 ft. 10 diam. 30 ft. 19 diam. 25 ft. 3 diam. 15 ft. 2 semiburied
D	Support	22 Support buildings 1 Bank of U/I processing equipment
E	Possible Crude Distillation	3 Possible fractionators/strippers 9 Support buildings 1 Building with possible furnace and processing equipment 7 Cylindrical tanks, 6 diam. 15 ft. 1 diam. 25 ft.

*All measurements of tanks have been rounded off to the nearest 5 feet.

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<u>Area</u>	<u>Functional Description</u>	<u>Equipment</u>
F	Possible Thermal Cracking	2 Pipe furnaces 1 Bank unidentified processing equipment (probably a fractionator, a reactor, and a flash tower) 6 Support buildings
G	Unidentified Processing	3 Possible fractionators 1 Building 4 Cylindrical tanks, 4 diam. 35 ft.
H	Storage/Support	1 Bank of cooling towers 1 U/I rack (probably for drum storage) 13 Support buildings 9 Cylindrical tanks, 7 diam. 15 ft. 2 diam. 30 ft. 4 Horizontal tanks
I	Probable Thermal Cracking	3 Pipe furnaces 3 Columns (possibly including a fractionator, a reactor, and a flash tower) 11 Support buildings 5 Cylindrical tanks, 4 diam. 25 ft. 1 diam. 10 ft.
J	Crude Oil Storage	2 Support buildings 8 Cylindrical tanks, 4 diam. 80 ft. 4 diam. 35 ft.
K	Possible Thermal Cracking	2 Pipe furnaces 3 Processing columns 1 Bank of U/I processing equipment (possibly a fractionator, a reactor, and a flash tower) 4 Support buildings 29 Cylindrical tanks, 4 diam. 30 ft. 9 diam. 25 ft. 16 diam. 15 ft.

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<u>Area</u>	<u>Functional Description</u>	<u>Equipment</u>
L	Storage/Support	1 Flare tower 2 Banks of cooling towers 8 Support buildings 3 Cylindrical tanks 3 diam. 15 ft.
M	Product Handling and Storage	1 Fractionator 9 Support buildings 42 Cylindrical tanks, 8 diam. 30 ft. 18 diam. 25 ft. 15 diam. 15 ft. 1 diam. 20 ft.
N	Crude Distillation	1 Bank of shell stills 5 Support buildings (1 under construction) 2 Cylindrical tanks, 2 diam. 35 ft.
O	Possible Thermal Cracking	1 Pipe furnace 5 Columns (possibly a fractionator, two reactors, and two flash towers) 10 Support buildings 1 Semiburied reservoir
P	Administration and Support	19 Support/administration buildings
Q	Loading Facility	12 Truck loading racks 8 Support buildings
R	Support	1 Bank of cooling towers 9 Support buildings (1 under construction) 1 Semiburied reservoir 4 Cylindrical tanks, 1 diam. 35 ft. 2 diam. 15 ft. 1 diam. 20 ft.

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<u>Area</u>	<u>Functional Description</u>	<u>Equipment</u>
S	Pumping Station	5 Truck loading racks 14 Support buildings (1 under construction) 5 Cylindrical tanks, 1 diam. 80 ft. 1 diam. 50 ft. 1 diam. 35 ft. 2 diam. 30 ft.

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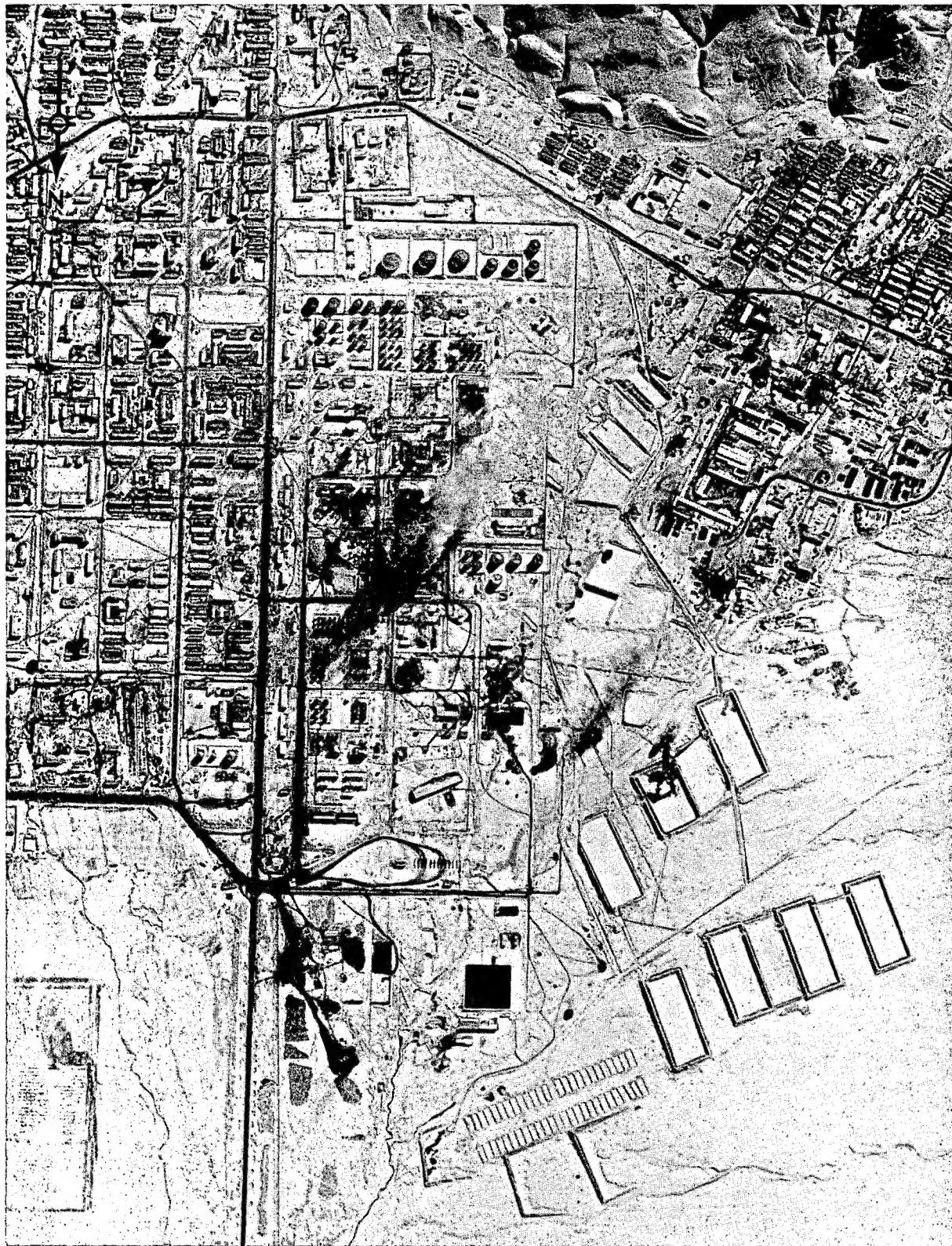


FIGURE 2. TU-SHAN-TZU PETROLEUM REFINERY AND STORAGE, CHINA.

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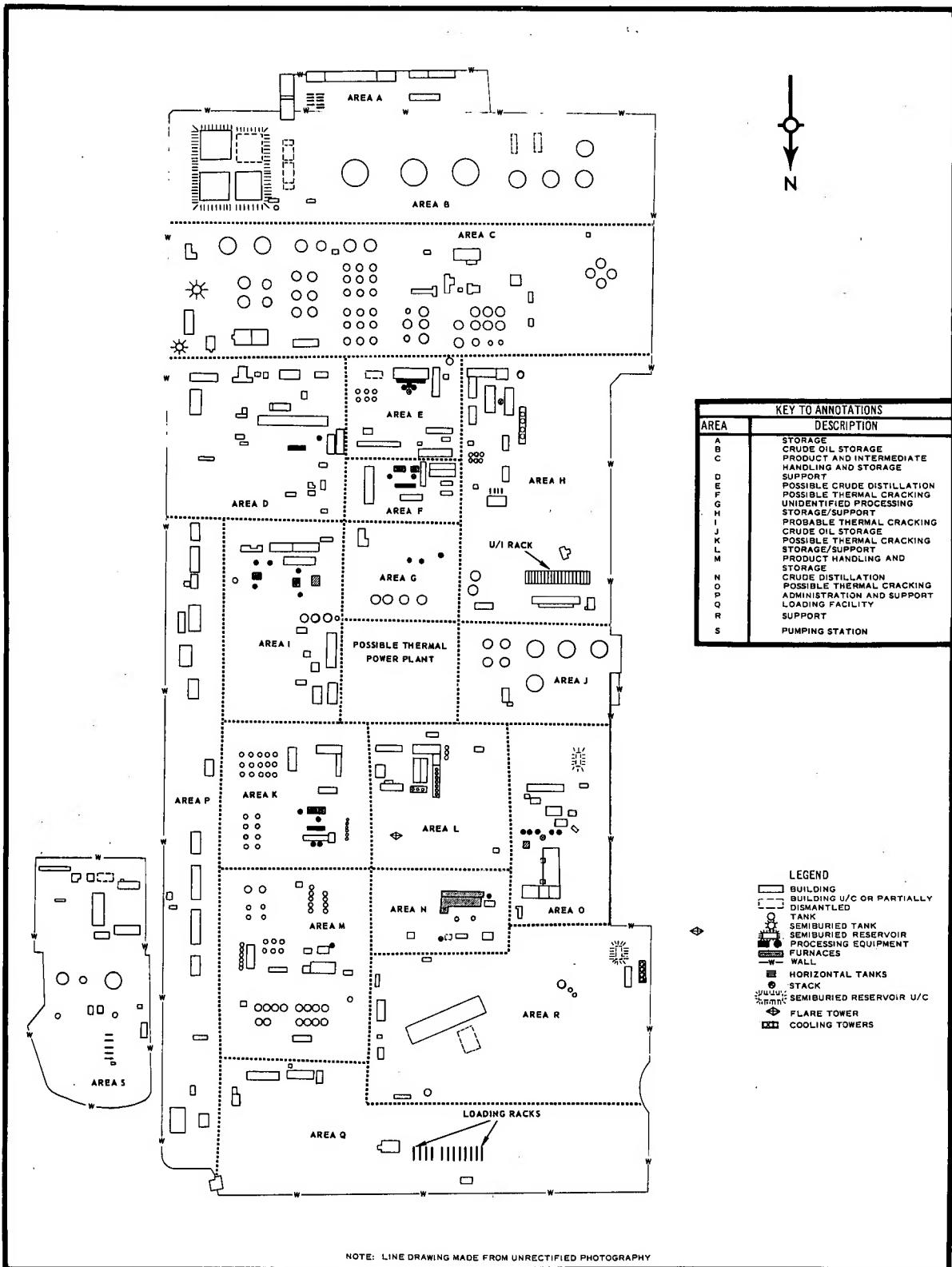


FIGURE 3. TU-SHAN-TZU PETROLEUM REFINERY AND STORAGE, CHINA.

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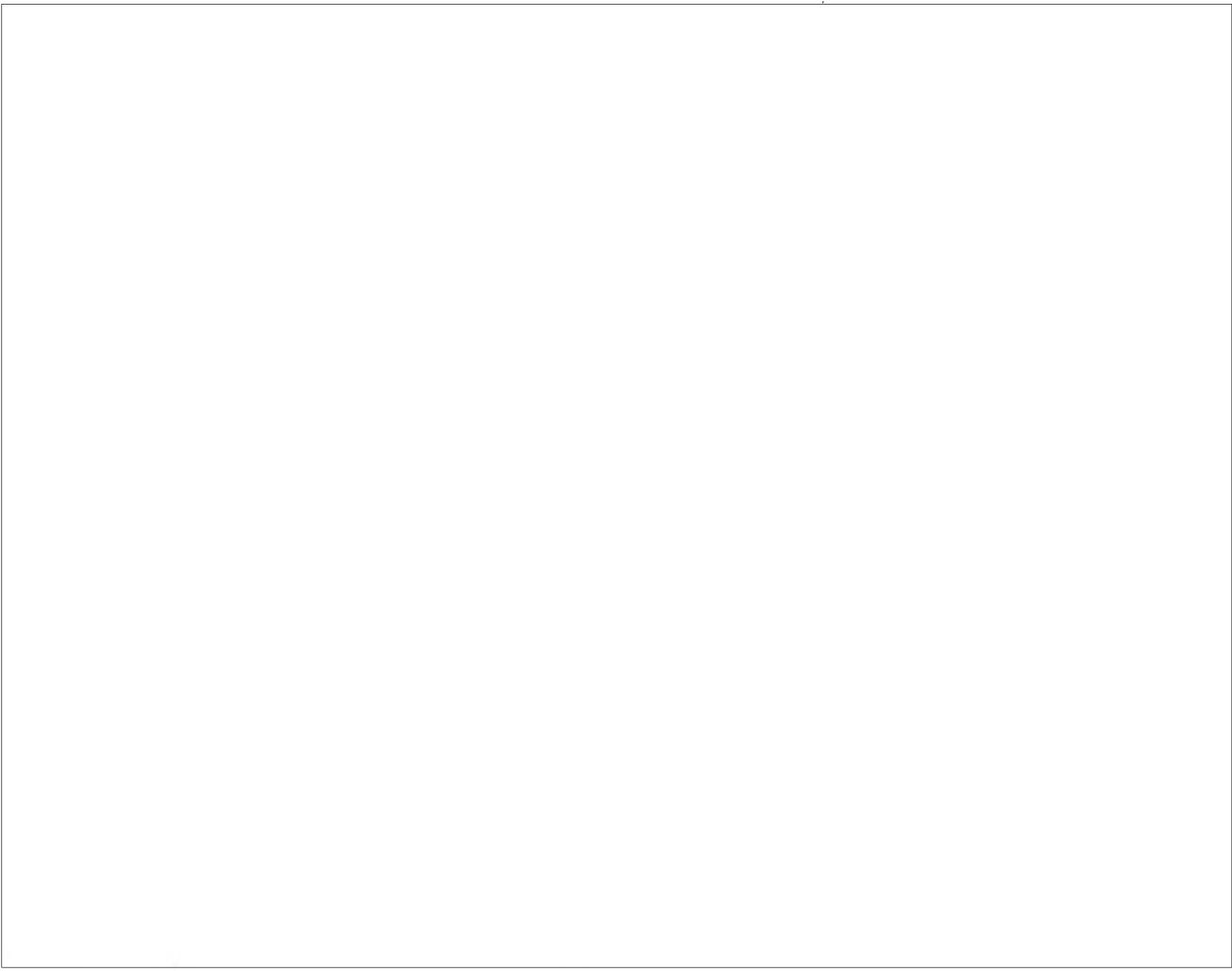
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Map

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2. DOD. [redacted] Successful Trial Production of Grade No. 1
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Documents - Continued

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Requirement

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